

p#16

09866582

1600

RAW SEQUENCE LISTING

DATE: 12/27/2002

PATENT APPLICATION: US/09/866,582A

TIME: 14:17:42

Input Set : A:\07917-145001.txt

Output Set: N:\CRF4\12272002\I866582A.raw

RECEIVED

JAN 06 2003

TECH CENTER 1600/2900

p.6

ENTERED

4 <110> APPLICANT: Witman, George B.
 5 Pazour, Gregory J.
 6 Rosenbaum, Joel L.
 7 Cole, Douglas G.
 9 <120> TITLE OF INVENTION: INTRAFLAGELLAR TRANSPORT
 11 <130> FILE REFERENCE: 07917-145001
 13 <140> CURRENT APPLICATION NUMBER: US 09/866,582A
 14 <141> CURRENT FILING DATE: 2001-05-24
 16 <150> PRIOR APPLICATION NUMBER: US 60/206,923
 17 <151> PRIOR FILING DATE: 2000-05-24
 19 <160> NUMBER OF SEQ ID NOS: 50
 21 <170> SOFTWARE: FastSEQ for Windows Version 4.0
 23 <210> SEQ ID NO: 1
 24 <211> LENGTH: 877
 25 <212> TYPE: DNA
 26 <213> ORGANISM: Chlamydomonas reinhardtii
 28 <220> FEATURE:
 29 <221> NAME/KEY: CDS
 30 <222> LOCATION: (114)...(518)
 32 <400> SEQUENCE: 1
 33 caccgctgcc gctgaacaga aagtctgcgc agactcgtct tcttgccaag ttcttgccaa 60
 34 aaccagcagg cctagagggt gccttaacct aaatatacaa aacacagagc atc atg 116
 35 Met
 36 1
 38 gac gcg gta gat aga gga gtc tac ttt gac gag gac ttt cat gtc cgc 164
 39 Asp Ala Val Asp Arg Gly Val Tyr Phe Asp Glu Asp Phe His Val Arg
 40 5 10 15
 42 att ctt gat gtt gac aag tac aat gct tca aag tcg ctc cag gac aac 212
 43 Ile Leu Asp Val Asp Lys Tyr Asn Ala Ser Lys Ser Leu Gln Asp Asn
 44 20 25 30
 46 aca aat gtg ttc att aac aac atc caa aat atg caa ggc ctc gtg gac 260
 47 Thr Asn Val Phe Ile Asn Asn Ile Gln Asn Met Gln Gly Leu Val Asp
 48 35 40 45
 50 aag tac gtg tcc gcc atc gac cag cag gtc gag cgg cta gaa gct gaa 308
 51 Lys Tyr Val Ser Ala Ile Asp Gln Gln Val Glu Arg Leu Glu Ala Glu
 52 50 55 60 65
 54 aag ctg aag gcc att ggc ctg cgg aac cgg gtg gct gcg ctg agc gag 356
 55 Lys Leu Lys Ala Ile Gly Leu Arg Asn Arg Val Ala Ala Leu Ser Glu
 56 70 75 80
 58 gag cgg aaa cgt aaa caa aag gag cag gag cgc atg cta gcg gag aag 404
 59 Glu Arg Lys Arg Lys Gln Lys Glu Gln Glu Arg Met Leu Ala Glu Lys
 60 85 90 95
 62 cag gag gag ctt gag agg ctc caa atg gag gag cag tcg ctg atc aag 452

RAW SEQUENCE LISTING

DATE: 12/27/2002

PATENT APPLICATION: US/09/866,582A

TIME: 14:17:42

Input Set : A:\07917-145001.txt

Output Set: N:\CRF4\12272002\I866582A.raw

```

63 Gln Glu Glu Leu Glu Arg Leu Gln Met Glu Glu Gln Ser Leu Ile Lys
64      100      105      110
66 gtg aag ggc gag cag gag ctc atg att cag aag ctg tcg gac agc agc      500
67 Val Lys Gly Glu Gln Glu Leu Met Ile Gln Lys Leu Ser Asp Ser Ser
68      115      120      125
70 agc ggg gcg gca tac gtg taaacgggtgt tcggacgtca tgcgtgcaaa      548
71 Ser Gly Ala Ala Tyr Val
72 130      135
74 ggtagtttgc tctgtgaggg ttggctgagg cggcggaggc tgctattgag gctgcagcat      608
75 gcggtctggt ggcagatgta cataacggta tggggtgttg gcgacagaac gaaacggcga      668
76 ggggtgcgca atgtcgtgca gaagcgacgc tacagcatcc atggtacgta gaggttact      728
77 ggggtgtcagt gcgtcgtccg ccactgggga cacacttgca gcgaggagcg ccattgtttg      788
78 gcccacggat tgcgtcaagg acttgaacgg cgccagtga ggcggggaat ggaatgtaaa      848
79 caaacgactc gaaaaaaaaa aaaaaaaaaa      877
81 <210> SEQ ID NO: 2
82 <211> LENGTH: 135
83 <212> TYPE: PRT
84 <213> ORGANISM: Chlamydomonas reinhardtii
86 <400> SEQUENCE: 2
87 Met Asp Ala Val Asp Arg Gly Val Tyr Phe Asp Glu Asp Phe His Val
88 1      5      10      15
89 Arg Ile Leu Asp Val Asp Lys Tyr Asn Ala Ser Lys Ser Leu Gln Asp
90      20      25      30
91 Asn Thr Asn Val Phe Ile Asn Asn Ile Gln Asn Met Gln Gly Leu Val
92      35      40      45
93 Asp Lys Tyr Val Ser Ala Ile Asp Gln Gln Val Glu Arg Leu Glu Ala
94      50      55      60
95 Glu Lys Leu Lys Ala Ile Gly Leu Arg Asn Arg Val Ala Ala Leu Ser
96 65      70      75      80
97 Glu Glu Arg Lys Arg Lys Gln Lys Glu Gln Glu Arg Met Leu Ala Glu
98      85      90      95
99 Lys Gln Glu Glu Leu Glu Arg Leu Gln Met Glu Glu Gln Ser Leu Ile
100      100      105      110
101 Lys Val Lys Gly Glu Gln Glu Leu Met Ile Gln Lys Leu Ser Asp Ser
102      115      120      125
103 Ser Ser Gly Ala Ala Tyr Val
104      130      135
106 <210> SEQ ID NO: 3
107 <211> LENGTH: 615
108 <212> TYPE: DNA
109 <213> ORGANISM: Chlamydomonas reinhardtii
111 <220> FEATURE:
112 <221> NAME/KEY: CDS
113 <222> LOCATION: (1)...(612)
115 <400> SEQUENCE: 3
116 atg gtg aag aaa gaa gtg aag ccc atc gat atc acc gca acg cta aga      48
117 Met Val Lys Lys Glu Val Lys Pro Ile Asp Ile Thr Ala Thr Leu Arg
118 1      5      10      15
120 tgc aaa gta gca gta gtc ggc gaa gcg act gtc ggc aag agc gcg ctc      96

```

RAW SEQUENCE LISTING

DATE: 12/27/2002

PATENT APPLICATION: US/09/866,582A

TIME: 14:17:42

Input Set : A:\07917-145001.txt

Output Set: N:\CRF4\12272002\I866582A.raw

```

121 Cys Lys Val Ala Val Val Gly Glu Ala Thr Val Gly Lys Ser Ala Leu
122          20          25          30
124 atc tct atg ttc acg agt aaa ggc agc aag ttt cta aag gac tat gcg      144
125 Ile Ser Met Phe Thr Ser Lys Gly Ser Lys Phe Leu Lys Asp Tyr Ala
126          35          40          45
128 atg acg agt ggg gtg gag gtg gtg gta gcc ccg gtg acc att ccg gac      192
129 Met Thr Ser Gly Val Glu Val Val Val Ala Pro Val Thr Ile Pro Asp
130          50          55          60
132 acg acg gtc tcg gtg gag ctc ttt ctg ctg gac acg gcg ggg agc gac      240
133 Thr Thr Val Ser Val Glu Leu Phe Leu Leu Asp Thr Ala Gly Ser Asp
134 65          70          75          80
136 ctg tac aag gag cag ata tcg cag tac tgg aac ggc gta tac tac gcc      288
137 Leu Tyr Lys Glu Gln Ile Ser Gln Tyr Trp Asn Gly Val Tyr Tyr Ala
138          85          90          95
140 att ctc gtg ttc gat gtg agc tct atg gag tcc ttc gag tcg tgc aag      336
141 Ile Leu Val Phe Asp Val Ser Ser Met Glu Ser Phe Glu Ser Cys Lys
142          100          105          110
144 gcg tgg ttt gag ctg ctc aaa tcg gcg cgt ccc gac cgc gag cgg ccg      384
145 Ala Trp Phe Glu Leu Leu Lys Ser Ala Arg Pro Asp Arg Glu Arg Pro
146          115          120          125
148 ctg cgc gcc gtg ctg gtg gcg aac aag acg gac ctt ccg ccg cag cgg      432
149 Leu Arg Ala Val Leu Val Ala Asn Lys Thr Asp Leu Pro Pro Gln Arg
150          130          135          140
152 cac cag gtg cgg ctg gac atg gcg cag gac tgg gcc acc acc aac acc      480
153 His Gln Val Arg Leu Asp Met Ala Gln Asp Trp Ala Thr Thr Asn Thr
154 145          150          155          160
156 ctc gac ttc ttc gac gtg tcc gcg aac ccg gcc aag gac gcg gat      528
157 Leu Asp Phe Phe Asp Val Ser Ala Asn Pro Pro Gly Lys Asp Ala Asp
158          165          170          175
160 gcg ccg ttc ctg tcc atc gcc acc acc ttc tac cgc aac tac gag gac      576
161 Ala Pro Phe Leu Ser Ile Ala Thr Thr Phe Tyr Arg Asn Tyr Glu Asp
162          180          185          190
164 aag gtg gcg gcc ttc cag gac gct tgc cgc aac tac tga      615
165 Lys Val Ala Ala Phe Gln Asp Ala Cys Arg Asn Tyr
166          195          200
168 <210> SEQ ID NO: 4
169 <211> LENGTH: 204
170 <212> TYPE: PRT
171 <213> ORGANISM: Chlamydomonas reinhardtii
173 <400> SEQUENCE: 4
174 Met Val Lys Lys Glu Val Lys Pro Ile Asp Ile Thr Ala Thr Leu Arg
175 1          5          10          15
176 Cys Lys Val Ala Val Val Gly Glu Ala Thr Val Gly Lys Ser Ala Leu
177          20          25          30
178 Ile Ser Met Phe Thr Ser Lys Gly Ser Lys Phe Leu Lys Asp Tyr Ala
179          35          40          45
180 Met Thr Ser Gly Val Glu Val Val Val Ala Pro Val Thr Ile Pro Asp
181          50          55          60
182 Thr Thr Val Ser Val Glu Leu Phe Leu Leu Asp Thr Ala Gly Ser Asp

```

RAW SEQUENCE LISTING

DATE: 12/27/2002

PATENT APPLICATION: US/09/866,582A

TIME: 14:17:42

Input Set : A:\07917-145001.txt

Output Set: N:\CRF4\12272002\I866582A.raw

```

183 65 70 75 80
184 Leu Tyr Lys Glu Gln Ile Ser Gln Tyr Trp Asn Gly Val Tyr Tyr Ala
185 85 90 95
186 Ile Leu Val Phe Asp Val Ser Ser Met Glu Ser Phe Glu Ser Cys Lys
187 100 105 110
188 Ala Trp Phe Glu Leu Leu Lys Ser Ala Arg Pro Asp Arg Glu Arg Pro
189 115 120 125
190 Leu Arg Ala Val Leu Val Ala Asn Lys Thr Asp Leu Pro Pro Gln Arg
191 130 135 140
192 His Gln Val Arg Leu Asp Met Ala Gln Asp Trp Ala Thr Thr Asn Thr
193 145 150 155 160
194 Leu Asp Phe Phe Asp Val Ser Ala Asn Pro Pro Gly Lys Asp Ala Asp
195 165 170 175
196 Ala Pro Phe Leu Ser Ile Ala Thr Thr Phe Tyr Arg Asn Tyr Glu Asp
197 180 185 190
198 Lys Val Ala Ala Phe Gln Asp Ala Cys Arg Asn Tyr
199 195 200
201 <210> SEQ ID NO: 5
202 <211> LENGTH: 1035
203 <212> TYPE: DNA
204 <213> ORGANISM: Chlamydomonas reinhardtii
206 <220> FEATURE:
207 <221> NAME/KEY: CDS
208 <222> LOCATION: (1)...(1032)
210 <400> SEQUENCE: 5
211 atg gat gac tct atg gac tac cct gac cgc gac ggg gac gac ctg gac 48
212 Met Asp Asp Ser Met Asp Tyr Pro Asp Arg Asp Gly Asp Asp Leu Asp
213 1 5 10 15
215 cag ttc cag ggc acc gcg cgc tcg cag gtc gtg cag aac cag ccg cac 96
216 Gln Phe Gln Gly Thr Ala Arg Ser Gln Val Val Gln Asn Gln Pro His
217 20 25 30
219 gac gag gag gtg aac ctg agt gag tcg gag agc ttc gcg gga gcg gat 144
220 Asp Glu Glu Val Asn Leu Ser Glu Ser Glu Ser Phe Ala Gly Ala Asp
221 35 40 45
223 gag cct cca gct gcg cct aga gat gcg tcg ctc ata gag tca cac gac 192
224 Glu Pro Pro Ala Ala Pro Arg Asp Ala Ser Leu Ile Glu Ser His Asp
225 50 55 60
229 atg gac gag ggg cca gct gct cca gcg cgg aca ctc tca cca acg ggc 240
230 Met Asp Glu Gly Pro Ala Ala Pro Ala Arg Thr Leu Ser Pro Thr Gly
231 65 70 75 80
233 tat gag gct gga aag cac gca cct ggc ggc atc gcc aac tcg gac gag 288
234 Tyr Glu Ala Gly Lys His Ala Pro Gly Gly Ile Ala Asn Ser Asp Glu
235 85 90 95
237 gca ccg ccg ggt gct tac aac gca cag gag tac aag cac ctg aac gtg 336
238 Ala Pro Pro Gly Ala Tyr Asn Ala Gln Glu Tyr Lys His Leu Asn Val
239 100 105 110
241 ggc gag gac gtg cgc gag ctg ttc tcc tac atc ggc cgc tac aag ccg 384
242 Gly Glu Asp Val Arg Glu Leu Phe Ser Tyr Ile Gly Arg Tyr Lys Pro
243 115 120 125

```

RAW SEQUENCE LISTING

DATE: 12/27/2002

PATENT APPLICATION: US/09/866,582A

TIME: 14:17:42

Input Set : A:\07917-145001.txt

Output Set: N:\CRF4\12272002\I866582A.raw

```

245 cag acg gtg gag ctg gac acg cgc atc aag ccc ttc atc cct gac tac      432
246 Gln Thr Val Glu Leu Asp Thr Arg Ile Lys Pro Phe Ile Pro Asp Tyr
247      130                      135                      140
249 atc ccc gcg gtg ggc ggc atc gac gag ttc atc aag gtg ccg cga ccc      480
250 Ile Pro Ala Val Gly Gly Ile Asp Glu Phe Ile Lys Val Pro Arg Pro
251 145                      150                      155                      160
253 gac acc aag ccc gac tac ctg ggc ctc aag gtt ctg gac gag ccg gcc      528
254 Asp Thr Lys Pro Asp Tyr Leu Gly Leu Lys Val Leu Asp Glu Pro Ala
255                      165                      170                      175
257 gcc aag cag tcg gac ccc acg gtg ctg acg ctg cag ctg cgg cag ctg      576
258 Ala Lys Gln Ser Asp Pro Thr Val Leu Thr Leu Gln Leu Arg Gln Leu
259                      180                      185                      190
261 tcc aag gag gcg ccg ggc gcc aag gcc gac atg gtg ggg cgg ctg gag      624
262 Ser Lys Glu Ala Pro Gly Ala Lys Ala Asp Met Val Gly Arg Leu Glu
263      195                      200                      205
265 cac acc gac gag aac aag gcc aag aag atc cag cag tgg atc gcc tcc      672
266 His Thr Asp Glu Asn Lys Ala Lys Lys Ile Gln Gln Trp Ile Ala Ser
267      210                      215                      220
269 atc aac gac atc cac aag gcc aag ccg gcc gcc acc gtc aac tac agc      720
270 Ile Asn Asp Ile His Lys Ala Lys Pro Ala Ala Thr Val Asn Tyr Ser
271 225                      230                      235                      240
273 aag cgc atg cca gag atc gag gcg ctg atg cag gag tgg ccg ccg gag      768
274 Lys Arg Met Pro Glu Ile Glu Ala Leu Met Gln Glu Trp Pro Pro Glu
275      245                      250                      255
277 gtg gag acc ttc ctc aag acc atg cac atg ccg tcc ggc gat gtg gag      816
278 Val Glu Thr Phe Leu Lys Thr Met His Met Pro Ser Gly Asp Val Glu
279      260                      265                      270
281 ctg gac atc aag acc tac gcc cgg ctg gtg tgc acg ctg ctg gac att      864
282 Leu Asp Ile Lys Thr Tyr Ala Arg Leu Val Cys Thr Leu Leu Asp Ile
283      275                      280                      285
286 ccc gtg tac gac gac ccc gtg gag agc ctg cac gtg ctg ttc aca ctg      912
287 Pro Val Tyr Asp Asp Pro Val Glu Ser Leu His Val Leu Phe Thr Leu
288      290                      295                      300
290 tac ctg gag ttc aag aac aac ccc atc ttc agg cag cac atg gag atg      960
291 Tyr Leu Glu Phe Lys Asn Asn Pro Ile Phe Arg Gln His Met Glu Met
292 305                      310                      315                      320
294 gag aac aag ctg gac ggc atg tcg ggc ggc ggc ggc ggc atg atg ggc      1008
295 Glu Asn Lys Leu Asp Gly Met Ser Gly Gly Gly Gly Gly Met Met Gly
296      325                      330                      335
298 ggc ggc gcg gat gtg ctg ggc ttg tga      1035
299 Gly Gly Ala Asp Val Leu Gly Leu
300      340
302 <210> SEQ ID NO: 6
303 <211> LENGTH: 344
304 <212> TYPE: PRT
305 <213> ORGANISM: Chlamydomonas reinhardtii
307 <400> SEQUENCE: 6
308 Met Asp Asp Ser Met Asp Tyr Pro Asp Arg Asp Gly Asp Asp Leu Asp
309      1                      5                      10                      15

```

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 12/27/2002
PATENT APPLICATION: US/09/866,582A TIME: 14:17:43

Input Set : A:\07917-145001.txt
Output Set: N:\CRF4\12272002\I866582A.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:21; Xaa Pos. 698
Seq#:22; Xaa Pos. 698
Seq#:24; Xaa Pos. 24
Seq#:25; Xaa Pos. 66